

**A NEW *Plexippus* SPIDER FROM THE WESTERN  
GHATS, KUMBAKARAI FALLS, THENI DISTRICT,  
TAMIL NADU, SOUTH INDIA (ARACHNIDA:  
ARANEAE: SALTICIDAE)**

**Karthikeyani, R. and S. Kannan**

Department of Environmental Studies, Madurai Kamaraj University, Madurai-  
625 021, Tamil Nadu, India  
Email: spiderkarthi\_2009@yahoo.com

**ABSTRACT**

*Plexippus gajbei* sp. nov. Zebra jumping spider of the family Salticidae is described from Southern parts of Western Ghats, Kumbakarai Falls, Theni District, Tamil Nadu, South India. While studying the spiders from Kumbakarai Falls the authors came across a new species which is detailed morphological characteristics with drawing are given which differentiate it from other related species.

**Keywords:** New species, *Plexippus*, Salticidae, Taxonomy, Western Ghats, Tamil Nadu, India

**INTRODUCTION**

The family Salticidae Blackwall, 1841 which numerically dominate both in genera and species globally, are represented by 5,570 species under 591 genera (Platnick, 2013). Salticids are the largest and most diverse family in India with nearly 207 species under 73 genera (Keswani *et al.*, 2012). Even though their number is large, they are one of the least studied families among Indian spiders (Sunil, 2013).

The genus *Plexippus* C.L Koch, 1846 is commonly known as Zebra jumping spider. They are mostly cosmopolitan in distribution. They are renowned for their often fantastic colouration and interesting range of behaviours (Jackson and Macnab, 1989). Ping and Li, (2003) recorded five *Plexippus* species, including one new species from China. *Plexippus* genus is represented by four species in India so far (Sebastian and Peter, 2009). The genus *Plexippus* has been studied by few researchers from India (Tikader, 1967; 1973), (Barrion and Litsinger, 1995), (Majumder, 2004), (Bayani and Trivedi, 2012).

**MATERIALS AND METHODS**

Spiders were collected from the Kumbakarai Falls which is situated 9 km away from Periyakulam, Theni District, Tamil Nadu, South India (10°10'48"N, 77°31'50"E). Kumbakarai Falls is a sub-tropical forest situated at the foot-hills of

Kodaikanal in the Southern parts of Western Ghats of Tamil Nadu. Spiders were collected by adopting the standard sampling procedures of Sutherland (1996). The collected spiders were preserved in Oudemann's fluid and identified using the key given by Pocock (1900), Tikader (1987; 1967; 1973), Biswas and Raychaudhuri (1998) Prószyński (2012). The taxonomic diagrams of whole spider body were made using a Stereo zoom microscope and illustrations were prepared with camera lucida. All measurements are in millimeter scale. The type specimen will be deposited in due course at Zoological Survey of India, Chennai, Tamil Nadu.

## RESULTS AND DISCUSSION

### *Plexippus gajbei* sp. nov.

**Type Specimen:** Holotype female on the bark of *Tamarindus indica* (Tamarind Tree).

**Type-locality:** India: Tamil Nadu, Western Ghats, Kumbakarai Falls, Coll. R. Karthikeyani, 05.01.2010.

**Etymology:** The specific name is a patronym in honour of Arachnologist, Dr. U. A. Gajbe.

### Diagnosis

The main taxonomical identification of a spider is based on the cephalothorax, abdomen, epigyne and internal genitalia that vary from species to species (Gajbe, 2008). The Zebra jumping spider *Plexippus gajbei* sp. nov. resembles *Plexippus paykulli* (Audouin) but can be distinguished from characteristic as (i) Cephalothorax is laterally provided with lateral white patch, but absent in *P. paykulli*. (ii) The dorsum of abdomen is laterally provided with white patch, but in *P. paykulli* without white patch. (iii) Epigyne and internal genitalia are also structurally different.

### Description

**General:** The cephalothorax and abdomen are greenish-black in colour. It has the following measurements: Total length 6 mm. Carapace 2.5 mm. long and 2 mm. wide; abdomen 3.5 mm. long and 2.6 mm. wide.

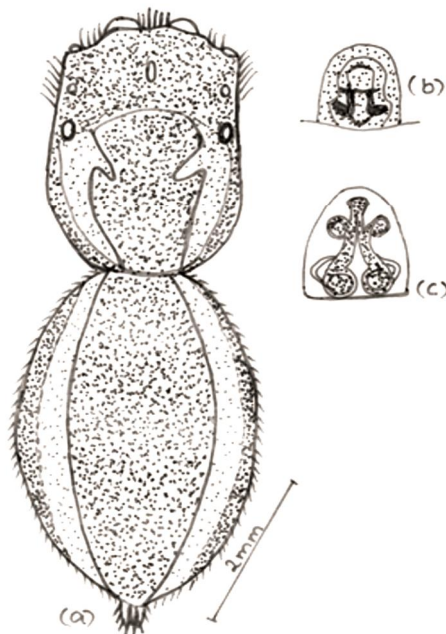
**Cephalothorax:** Longer than wide, rectangular in shape weakly narrowed posteriorly wider anteriorly, laterally provided with lateral white patch (Fig. 1a). Eyes are pearly white, the anterior rows of eyes are recurved, medians larger than the lateral and separated to each other. Second pair of eyes are very minute, third pair slightly larger than the anterior lateral but smaller than the anterior median. Chelicerae are strong, the inner and outer margin provided with one large tooth each. Maxillae are longer than wide, inner side whitish and scopulated, wider anteriorly but narrowed posteriorly. Labium is wider than long and scopulated anteriorly. Legs are strong, clothed with hairs and spines. Femora I, II, III and IV are brown in colour.



1– Dorsal view

2– Ventral view.

Images 1-2. *Plexippus gajbei* sp. nov. female.



**Fig. 1:** (a-c) *Plexippus gajbei* sp. nov. (a) Dorsal view of female, legs omitted (b) Epigyne (c) Internal genitalia

**Abdomen:** Longer than wide, nearly oval, narrowing posteriorly. Dorsum of abdomen is laterally provided with white patch (Fig. 1a). Ventral side is laterally provided with pale brown patch and mid ventrally with dark brown band. Spinnerets are situated at the posterior end of the abdomen. Epigyne is situated on the ventral side of the abdomen above the epigastric furrow (Fig. 1b). Internal genitalia as in (Fig. 1c).

#### ACKNOWLEDGEMENTS

We are thankful to the Tamil Nadu Forest Department for giving permission to conduct this study. The first author is thankful to all those helped during the survey and special thanks are due to Dr. U.A. Gajbe, Ex- Scientist-D (Z.S.I) at present 84, Gajanandham, Sahakar Nagar, Nagpur for going through the manuscript and identifying the species. I thank Dr. K. Ilango, Scientist 'D' - Zoological Survey of India, Chennai for helping me to deposit the specimen at Zoological Survey of India, Chennai. I am also indebted to Dr. B.A. Daniel, Senior Scientist, Zoo Outreach Organization, Coimbatore, Chair, IUCN SSC South Asian Invertebrate specialist group, who provided valuable suggestions during the course of the research work.

#### REFERENCES

- Barrion, A.T and J. A. Litsinger. 1995.** Riceland Spiders of South and Southeast Asia. CAB International & International rice Research Institute. Pp.700.
- Bayani A.S. and J.N. Trivedi. 2012.** Household spider species exhibit Kleptoparasitism: An interaction between *Plexippus paykulli* and *Hasarius adansonii*. *Res. J. Recent Sci.*, 1(3), 19-25.
- Biswas, V. and D. Raychaudhuri. 1998.** Jumping spiders of Bangladesh: Genus *Plexippus* Koch (Araneae: Salticidae). *Rec. Zool. Surv. India*, 96: 167-171.
- Blackwall, J. 1841.** The difference in the number of eyes with which spiders are provided proposed as the basis of their distribution into tribes; with descriptions of newly discovered species and the characters of a new family and three new genera of spiders. *Transactions of the Linnean Society of London*, 18: 601-670.
- Gajbe, U. A. 2008.** *Fauna of India and the adjacent countries, Spider* (Arachnida: Araneae: Oxyopidae). 3: 1-117.
- Jackson, R.R. and A.M. Macnab. 1989.** Display, mating, and predatory behavior of the jumping spider *plexippus paykulli* (Araneae: Salticidae). *New Zealand J. Zool.*, 16: 151-168.
- Keswani, S.; P. Hadole and A. Rajoria. 2012.** Checklist of spiders (Arachnida: Araneae) from India-2012. *Ind. J. Arachnol.* 1(1): 1-129.
- Koch, C.L. 1846.** *Die Arachniden. Nuernberg. Bd. 13. S.1- 234.*

A new *Plexippus* spider from the Western Ghats.....Karthikeyani. and Kannan

**Majumder, S.C. 2004.** Taxonomic studies of some spiders from mangrove and semi-mangrove areas of Sundarban. *Rec. zool. Surv. India.* 20 (2): 1- 42.

**Ping, X.J. and S. Li. 2003.** Spiders of the genus *Plexippus* from China (Araneae: Salticidae). *Revue Suisse de Zoologie.* 110 (4): 749-759.

**Platnick, N. I. 2013.** The world spider catalog, version 13.5. American Museum of Natural History, online at <http://research.amnh.org/iz/spiders/catalog>. DOI: 10.5531/db.iz.0001.

**Pocock, R. I. 1900.** *The fauna of British India, including Ceylon and Burma.* Arachnida. London, pp. 279.

**Prószyński, J. 2012.** Salticidae (Araneae) of the World; online at <http://www.salticidae.org/salticid>.

**Sebastian, P. A. and K. V. Peter. 2009.** Spiders of India, First Edition, *Universities press*, Hyderabad, pp.614.

**Sunil, J. K. 2013.** New species of *Yaginumaella* Prószyński from India (Araneae: Salticidae). *Mun. Ent. Zool.*, 8(1): 63-66.

**Sutherland, W. J. 1996.** *Ecological Census Techniques. A Handbook.* Cambridge University Press, pp. 336.

**Tikader, B. K. 1967.** Studies on some Salticidae spider from Sikkim, Himalaya, India. *Proc. Indian Acad. Sci.*, 66 (B): 117-122.

**Tikader, B. K. 1973.** Studies on some jumping spiders from India (Family: Salticidae). *Proc. Indian Acad. Sci.*, 78 (B): 68-72.

**Tikader, B. K. 1987.** *Hand book of spiders.* Pp. 1-251.